# CONDUCT COURSE EVALUATIONS



# **Conduct Course Evaluations**

### Introduction

For the next three hours, we are going to discuss how to conduct course evaluations. We will accomplish this by discussing how to analyze courses to be evaluated, evaluating school documentation, determining the focus of evaluation, who to sample for evaluation, selecting evaluation instruments, evaluation methods, how to brief evaluators, and how to collect evaluation data.

### **Importance**

People evaluate all the time. Listen in on conversations and you will hear: "I loved that television program last night." "He is doing a lousy job." "That car isn't worth the price they charge." "The food at Joe's Cafe is much better now than it used to be." In more formal terms, you hear about a supervisor evaluating an employee's work performance or a teacher evaluating a student's academic progress. We come to realize that we have been evaluating things of various kinds without necessarily calling it evaluation.

<u>Terminal Learning Objective:</u> With the aid of references and in a formal school environment, formulate course evaluation per the SAT and DOD Manual.

### **Objectives**

### **Enabling Learning Objectives:**

With the aid of references and in a formal school environment:



- ❖ Analyze courses to be evaluated per the SAT and DOD Manual.
- Evaluate Functional Learning Center documentation per the SAT and DOD Manual.
- ❖ Determine the focus of evaluation per the DOD Manual, AFMAN, and the SAT Guide.
- Distinguish who will be sampled for evaluation per the DOD manual, AFMAN, and the SAT guide.
- ❖ Brief evaluators per the DOD Manual, AFMAN, and the SAT Guide.
- Collect evaluation data per the DOD Manual, AFMAN, and the SAT guide.

With the aid of references given a task to conduct internal/external evaluations:

- Select evaluation instruments per the DOD Manual, AFMAN, and the SAT Guide.
- ❖ Determine evaluation methods per the DOD Manual, AFMAN, and the SAT Guide.



# **Conduct Course Evaluations (cont)**

### This Lesson discusses the follow topics:

### In this Lesson

lopic	See page
Topic 1: Analyze Course to be Evaluated	3
Topic 2: Formative Evaluation	4
Topic 3: Summative Evaluation	5
Topic 4: Who Conducts the Evaluation?	6
Topic 5: Evaluate Functional Learning Center Documentation	8
Topic 6: Determine the Focus of Evaluation	9
Topic 7: Determine Who will be Sampled for Evaluation	12
Topic 8: Determine Evaluation Instruments	13
Topic 9: Types of Evaluation Instruments	17
Topic 10: Evaluation Methods	24
Topic 11: Brief Evaluators	25
Topic 12: Collect Data	26
References	27
Lesson Notes	28

# **Analyze Course to be Evaluated**

### **Description**



Before we can determine which course or courses need to be evaluated, we must first know why we evaluate. The purpose of planning and conducting evaluation is to develop and implement a strategy for determining the effectiveness and efficiency of an instructional program. An instructional program is:

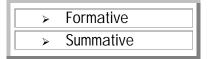
- Effective when it allows student mastery of learning objectives that are based on Individual Training Standards (ITS).
- Efficient when it meets instructional objectives by making the best use of resources (e.g., personnel, time, money, supplies).

Personnel evaluating a course should become familiar with:

- The types of evaluation.
- The focus of an evaluation.
- The instruments used in evaluation.
- Evaluation instrument parameters.
- The steps for planning and conducting an evaluation.

# Types of Evaluation

There are two types of evaluation:



# **Formative Evaluation**

### **Description**



Formative evaluation is conducted during the development of an instructional program.

It is also possible to conduct a formative evaluation through the first iteration of implementation, but this is not the preferred method for validating instruction.

Formative evaluation will involve content reviews by:

- ☑ Subject Matter Experts (SME)
- ✓ Process Action Teams

The primary objective of formative evaluation is to review the effectiveness and efficiency of course materials and to make any revisions necessary prior to implementation of course materials.

### Formative evaluation:

### **Importance**



- ★ Will never assess student performance
- ★ Will rarely assess instructional environment
- \* Will only occasionally assess instructor performance.

Formative evaluation provides information useful for improving instructional program development.

### Example

During the development of course curriculum, formative evaluation could involve:

- ⇒ The review of ITSs
- Content review of course materials by Subject Matter Experts
- ⇒ Validation of instruction.

### **Results**

Formative evaluation results in immediate feedback to the curriculum developer, who then uses the information to make the necessary revisions to course materials (e.g., lesson plans, student materials, media, and test items).

# **Summative Evaluation**

### **Description**



Summative evaluation is conducted after a course of instruction has been implemented. It provides judgments about a program's worth or merit.

Summative evaluation leads to decisions concerning program improvement, continuation, extension, or termination.

### **Example**

After a course curriculum is completely developed, a summative evaluation might be conducted to determine how well graduates are performing on the job following instruction.

### **Importance**



Summative evaluation assesses:

- Effectiveness of student performance
- Course materials
- Instructor performance
- Instructional environment

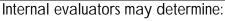
Summative evaluation can also be a comprehensive assessment of all these factors to evaluate the instructional program's overall effectiveness and efficiency. Formative and summative evaluations are further distinguished by who conducts and controls the collection of evaluation data.

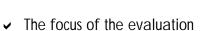
# Who Conducts the Evaluation?

### **Internal Evaluators**

In either formative or summative evaluations, internal evaluators, those who work within the Functional Learning Center, are responsible for:

- The instructional program
- Control and conduct of the evaluation





- **Evaluation instruments**
- Parameters of the evaluation.
- Most evaluations are conducted by internal evaluators (e.g.,



instructors, school personnel).

In either formative or summative evaluations, external evaluators, those who work outside the Functional Learning Center, are responsible for:

### **External Evaluators**

- The instructional program
- Control and conduct of the evaluation

External evaluators normally include:

- Mobile Training Teams (MTT) from higher headquarters
- Site-visit teams from other schools
- A Functional Learning Center may request external evaluators to assess graduate performance on the job. In this instance, the Functional Learning Center controls the evaluation, but the graduates command may be involved in conducting the evaluation. Due to the coordination required with external sources, this type of evaluation is sometimes more difficult to control than those conducted by internal evaluators.

# **Skills Check**



1. Captain Evalua, the school director for Boating on the New River would like to ensure that his boating safety course is effective and meeting student's needs. Recently, his instructors have updated lesson plans and he would like to have some feedback generated prior to the implementation of the new course. What type of evaluation will Captain Evalua need to perform? Who would be performing the evaluation, an internal or external evaluator?
2. Once Captain Evalua's school had successfully implemented the Boating Safety course, other outside agencies wanted to come in to assess the course. What kind of evaluators would be assessing his boating course, internal or external? What type of evaluation would be preferred?

# **Evaluate Functional Learning Center Documentation**

### **Significance**



- → As part of evaluation planning, information and materials that may assist in the evaluation should be identified and reviewed.
- → This information includes the school evaluation SOP, existing evaluation instruments, and previous evaluation data from such sources as Course Content Review Board (CCRB) minutes and Inspector General (IG) inspections.
- Program of Instruction (POI) information is helpful as an overview of the course structure.
- Resource information pertinent to the evaluation topics should be reviewed for currency, relevance, and suitability for the planned evaluation.
- ➡ When the evaluation plan is developed, it must be reviewed to ensure that it addresses the planning phase.
- → A review of the collected evaluation planning information will provide an understanding of the program issues to be answered and the problems to be solved by the evaluation.

# **Determine the Focus of Evaluation**

### **Description**

- ☑ The object of a comprehensive evaluation is to assess the effectiveness and efficiency of an instructional program through the measurement of student, instructor, course materials, and environmental factors.
- ☑ Ideally, the evaluator will look at the entire instructional program (all four factors) when conducting an evaluation. Although a detailed evaluation of student performance may indicate a need to evaluate one or more of these other factors.
- ☑ An evaluation is a decision tool. If administered correctly, it will provide the decision-making information necessary to improve the quality of instruction, a variety of performance tests, measures of instructor behavior, and feedback on the quality of instruction from student questionnaires. A determination must be made as to what is available to make decisions on revising instruction. These questions may include the following when evaluating:



Student Performance
Course Materials
Instructor Performance
Instructional Environment

# **Determine the Focus of Evaluation (cont)**

### Student Performance

- Are students mastering the learning objectives?
- What tasks did students have difficulty with?
- Are graduate students performing well on the job?
- Are graduates performing better than they did before they received instruction?
- What tasks are causing graduates difficulty on the job?

### Course Materials



- Boos the instruction effectively allow the mastery of learning objectives?
- Do the instructional materials support the learning objectives?
- Do the learning objectives support the ITSs?
- Does the instructional method facilitate maximum learning?
- ls the instructional method appropriate to the subject matter?
- Are training aids suitable to the instruction and subject matter?
- Does the test accurately measure the knowledge, skill, or the task being taught?
- Are the testing methods appropriate to the subject matter (knowledge vs performance-based)?
- ls sufficient time allotted for instruction and practice?
- Are tasks being taught that are not important to the job?
- Do graduates of the course believe non-essential instruction is contained in the instructional program?

# **Determine the Focus of Evaluation (cont)**

### Instructor Performance

Is the instructor's presentation of instruction effective?

Does the instructor promote student participation?

Does the instructor provide feedback to the students?

Does the instructor have sufficient knowledge of the course material?

Does the instructor communicate and interact effectively?

Does the instructor utilize media effectively?



Does the instructional setting facilitate maximum learning?

Do available resources allow the course to be as performance-based as possible?

Is the instructor to student ratio adequate?

Is the instructional environment appropriate to the subject matter and realistic to the job setting?



# Determine Who will be Sampled for Evaluation

# How to Determine

- ☑ Once the focus of the evaluation has been determined, the sources of evaluation information must be identified.
- ☑ For each evaluation question or problem, consideration must be given to the possible sources for collecting evaluation data and how many people should be sampled.



- ☑ If possible, a wide range of relevant data should be collected from several different sources. However, the cost (time, personnel, materials, money) of collecting the information from each source must be considered. If a needed source of information is too costly to collect, it must be omitted.
- ☑ If course materials, instructor performance, instructional environment, or the overall instructional program will be evaluated, determinations must be made as to who will be sampled to gather information and how large the sample size will be.
- ☑ An appropriate sampling procedure is to have four times as many respondents as there are evaluation questions.

### **Four Ways**

# There are four ways in which respondents may be selected for inclusion in a survey:

Selecting every person (e.g., all students attending the course, all graduates, all instructors involved in the instructional program).

Selecting a simple random sample of people involved in the instructional program.

Systematically selecting a sample of people (e.g., surveying every tenth graduate, every other peer instructor).

Selecting a stratified random sample of people (e.g., sampling randomly from within groups of graduates to guarantee representation from all groups).

# **Determine Evaluation Instruments**

# Types of Data

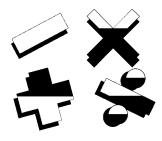
Based on what will be evaluated and who will be sampled for evaluation, determine the evaluation instruments that will be used to collect evaluation data. Decisions concerning evaluation instruments should also be based on the number of personnel available and the time and cost considerations necessary to conduct the evaluation. A critical planning step for conducting evaluation involves selecting an evaluation instrument. The evaluation instrument chosen will depend on the data collected (e.g., student performance, instructor performance, course materials, instructional environment, overall instructional program) and from whom those data will be collected.

There are two types of data:	
Quantitative Data	
Qualitative Data	

### Quantitative Data

Quantitative data are objective in nature.

→ They emphasize standardization, precision, objectivity, and reliability of measurement.



- → These data are characterized not only by a focus on producing numbers, but also generating numbers that are suitable for analysis by comparison measures.
- Quantitative data are gathered by standardized methods (e.g., written and performance tests, participant observation) and focus on facts and observable behavior.
- → Students test data are generally characterized by quantitative data.

# **Determine Evaluation Instruments (cont)**

### Qualitative Data



Qualitative data are subjective in nature. These data tend to focus on human factors and employ multiple data-gathering methods, especially survey questionnaires, interviews, and participant observations. Qualitative data are analyzed with a major focus on the extraction of concepts or opinions, rather than observable, measurable facts. The effectiveness a course of instruction or an instructor's delivery of instruction is generally characterized by qualitative data. Student performance data is the most direct measure of instructional effectiveness. To evaluate student performance, quantitative data are generally collected through student completion of a written or performance test. However, to evaluate any facet of an instructional program, qualitative data may be collected from:

Collection Sources
School Supervisors
Instructors
Co-workers
Students
Graduate / Supervisors of Graduates
Data received from other sources

### School Supervisors

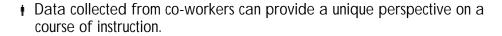
Supervisors who observe implementation of a course can provide data regarding student performance, instructor performance, course materials, and instructional environment.

### Instructors

Instructors can provide information on the successes of the period(s) of instruction, student performance, effectiveness of lesson materials, media, instructional environment, and any perceived difficulties encountered during the implementation of the instruction.

# **Determine Evaluation Instruments (cont)**

### **Co-Workers**





- Co-workers are often subject matter experts in the course material taught in a school.
- Many are instructors themselves and can interpret instructional events in terms of their appropriateness to the subject matter.

Students who attend the course have valuable feedback concerning:

### **Students**

- ★ Instructor performance (e.g. delivery of instruction, use of media, ability to clearly explain and answer questions)
- ★ The instructional environment (e.g. appropriateness to the subject matter, job realism, distractions)
- ★ The difficulty or value of course materials (e.g. lesson plans, student materials, supplemental materials, media, test items).

### Graduates / Supervisors of Graduates

- Data may also be collected from graduates of the Functional Learning center and supervisors of graduates of the Functional Learning center.
- Data gathered from these sources are useful for determining if the instruction received allowed graduates to successfully perform their jobs.
- In a simple analysis, student test results may be compared to job performance data to determine if the learning objectives of the course were met.



# **Determine Evaluation Instruments (cont)**

# Data received from other sources

- Data received from other sources are useful for evaluating the relevance of the course to the job, as well as identifying specific suggestions for improving the course.
- Data may be collected through telephone interviews and survey questionnaires.



Data sources may be graduates, supervisors of graduates, higher headquarters elements, Occupational Field (OccFld) specialists at Marine Corps Combat Development Command (MCCDC), Headquarters Marine Corps (HQMC), and other services that have military occupational specialties (MOS) similar to those being instructed at the school.

# **Types of Evaluation Instruments**

### Student Test Data



- Student performance provides the most direct measure of instructional effectiveness.
- By focusing the evaluation on student performance, much can be learned about the instructional program's worth or merit.
- A trend of excellent or poor student performance may indicate a need to evaluate the instructional programs as a whole to determine if the course instructs and measures what it should.
- Student test data include records of student performance in both test and non-test situations (observation of performance without testing---practical application).
- Student test data provides quantitative data concerning student performance.
- Student performance must be evaluated during each course, either through written or performance tests, to determine if students have mastered the learning objectives.

One method of determining whether instruction measures what it should is through the use of a pre-test and post-test.

### Pre-test / Post-test

A pre-test can provide a baseline of information pertaining to the student's knowledge and skills before instruction.

This information is useful for tailoring instruction to the target audience. Pre-test data can also be compared with post-test data to determine if instruction was effective. For instance, if students are unable to perform a task before instruction, but can perform that task after instruction, a determination can be made as to the effectiveness of instruction.

However, unknown factors may have contributed to successful performance following a course of instruction that cannot be attributed to the instructional program.

To remove this uncertainty, a control group of students not receiving instruction can be given the pre-test along with the students who will receive instruction.

Following instruction, both groups are given the post-test. The test results then can be analyzed, and comparisons can be made between the students who received instruction and the control group to determine the amount of improvement in learning that can be attributed to the instruction.

### Test Performance Data From Course Graduates

- ① A useful evaluation technique is the actual testing of graduates performance on the job.
- These data can effectively measure the transfer of learning from the instructional setting to the job.
- These data are generally gathered by the graduates command and provided to the formal school/training center at the schools request.
- ① Some operational units have their own testing programs that can be used as a source of data concerning graduates job performance.
- An <u>example</u> is the Tank Crew Gunnery Skills Test used in tank battalions.
- Performance tests have an advantage over observation of graduate performance on the job because they can focus directly on skills that are the focus of the evaluation.

### Questionnaire

- A questionnaire is a data collection instrument consisting of a printed form containing a set of questions used to gather information from respondents.
- Questionnaires are a self-report type of measure and therefore, provide qualitative data on a topic.
- These subjective data can be very useful because they provide opinions of how the course was implemented and reveal any perceived difficulties inherent in the instructional process.
- Questionnaires must be structured to be flexible in order to accommodate respondent concerns, permit anonymous answers, and allow additional comments to be written.
- Questionnaires allow input to be recorded and addressed.



# Questionnaires can be used to collect data on the following:

Graduate Performance on the Job

Instructor Performance

Course Data

### Graduate Performance on the Job

- A survey questionnaire may be used to determine the success of a course of instruction by assessing whether students retained information learned in the formal school/training center and applied it on the job.
- © The questionnaire can be used to record data on a graduate's performance on the job as reported by the graduate and the graduate's immediate supervisors.



- These data should be gathered several months (at least six to nine months) after the course has been completed to give the graduate adequate opportunity to put into practice what was learned during instruction.
- When course graduates are on the job and working in the areas in which they received instruction, this type of questionnaire is useful for capturing information concerning opinions about the relevance of the curriculum to the job and how the curriculum might be revised to be more effective and efficient.
- Most distributed questionnaires are sent to Fleet Marine Force (FMF) commands. However, questionnaires are sometimes sent to follow-on schools.

### **Example**

Officer Candidate School may survey students at the Basic School. Similarly, a basic electronics course could establish a survey for graduates in the follow-on MOS training course.

# Instructor Performance

- Instructor performance data can be gathered through a questionnaire submitted to supervisors or peer instructors who observe the instructor's delivery of instruction.
- One of the most common ratings of instructor performances comes from students. An instructional rating form (IRF) is a questionnaire submitted to students following completion of a period of instruction.
- Students should complete IRFs while the event of the instruction is fresh in their minds.
- The IRF is the primary means by which instructors get immediate feedback, both good and bad, on a lesson or group of lessons.
- IRFs generally have questions on the quality of the instruction, the instructor's delivery of the instruction, the instructor's use of methods, media, and evaluation procedures.

# Course Data



- Course materials are carefully reviewed and assessed prior to implementation during formative evaluation.
- Course materials can also be assessed following implementation, during summative evaluation.
- Like instructor performance data, course data can be gathered via a questionnaire submitted to supervisors or peer instructors who observe the conduct of the course.
- Sourse data can also be collected from the students who received instruction and the instructors who taught instruction.

Types of Course Data:
Course Critique
After Instruction Report (AIR)
Interview
Observation

### Course Critique

A common method of collecting course data is from course critiques. These data are gathered by a questionnaire (or by interview) completed by students following completion of a course. These data are usually more comprehensive than IRF data so that in addition to the quality of instruction, the quality of billeting, mess, and other facilities are assessed. This evaluation is important because the student's overall impression of the course may be positive even though one or more IRFs were negative.

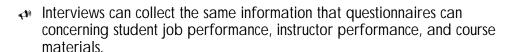
### After Instruction Report

An AIR is the means by which instructors document their own assessment of a class period, lesson, block, or other unit of instruction. Included in this assessment are instructors' first-hand impressions of deficiencies in the course material or areas that were especially problematic for students. To support this assessment, instructors often include data such as IRF summaries, student test scores, and other evidence bearing on the success of the unit of instruction to identify trends that may indicate a need to further evaluate or modify the instructional program.

Like a questionnaire, an interview is a set of structured questions used to gather information from respondents.

### **Interview**

- Interviews are conducted in person or over the telephone.
- Interviews are conducted as the primary method of data collection or as follow-up to a survey questionnaire.





### Advantages

- There are some advantages to conducting interviews in comparison to survey questionnaires; however, available resources (personnel, time, money) will probably determine the approach taken.
- Interviewing allows more detailed information to be gathered because explanations can be given to questions that are not understood by the respondents.

### Disadvantages

 One disadvantage, however, is that interviewing requires personnel skilled in interviewing techniques.

### **Observation**

- Data concerning student and instructor performance can be effectively gathered via observation.
- Evaluators or instructors can observe student performance during the conduct of practical applications and performance tests; student performance on the job can be observed and recorded by personnel at the graduate's command. Supervisors, peer instructors, or students can observe instructor performance during instruction.
- It is not practical to base an entire evaluation program on observation data because evaluations through observation are time-consuming and expensive in terms of personnel and resources.

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# Observation (cont)

- Observations should always be supported by survey questionnaire data, interview data, or performance test data.
- Observation alone may not adequately assess the focus of the evaluation.

### **Example**



If a graduate cannot perform a particular task, observation of graduate performance cannot concretely point to deficiency in instruction received in the Functional Learning center; It will not provide sufficient information to guide the evaluator's decisions regarding course revisions.

- If observation is conducted, the tasks to be observed should be carefully selected.
- In the previous example, a selection criterion might be the need to diagnose the exact causes of the problems that graduates are having with a particular task on the job.

# **Skills Check**



You are going to be split into groups of four and assigned one type of evaluation instrument: test data, questionnaires, interviews, and observations. Once you are in your groups, you will write your answers to the following questions on this page and also on a turn chart to present to the class.

Brainstorm pros/cons of the evaluation instrument? (Do not rely on student handouts for answers.)
Explain the value of this instrument and how it can benefit the program?
What kind of information can it provide?
Provide an example of this type of instrument used at your school and its usefulness? (If you do not know of an example from your own school, think of another example where you have seen this type of instrument used. Do not use examples in your handout).

# **Evaluation Methods**

### Approaches

There are numerous approaches to or models of educational program evaluation. These consist of a framework with relatively explicit perspectives and procedural methods for conducting evaluation. Because evaluation is often a multifaceted endeavor, more than one approach or model may be employed in combination in the evaluation process. <u>Some approaches are:</u>

Determines whether stated objectives of a program



Objective Based Review	have been met. The focus of the objectives are on the participants' learning (with resulting changes in the individual, organizations and/or the program operations). A sample question would be: Did the program contribute to changes in the organization?
System Evaluation	Provides feedback on the effectiveness of the program planning and execution process, the educational unit/function, and the efficiency of the use of resources in relation to the outcomes of educational programs. One emphasis is cost-benefit analysis. A sample question would be: Has the process of planning and implementing the program been effective and efficient? Or have resources been used wisely in relation to the benefits of the program?
Case Study Method	Gives a "thick description" of what a program looks like from a viewpoint of participants, staff, sponsors and/or other appropriate groups. It characterizes how a program has been implemented and received. A sample question would be: What are the program's strengths and weaknesses from the participant's perspective?
Professional and Expert Review	Relies on a panel of experts making judgments usually based on a predetermined set of categories and standards about a program (such as program accreditation, formal program reviews). It most often focuses on the resources, processes, and outcomes of large educational programs. Sample questions would be: Does the program meet a predetermined set of standards related to the process and outcomes of the program? Is the program doing what it claims it is doing?

## **Brief Evaluators**

### **Description**

Evaluators must be briefed on their roles and the intent of the evaluation, when and how to collect data, how to monitor evaluation procedures, and how to ensure all evaluation data are gathered and complete.

- The instructional requirements for collecting evaluation data will vary with the experience of the evaluators and with the nature of the evaluation instrument. For most instruments, a simple orientation is sufficient.
- Some instruments may require written instructions, a job aid, or practice with feedback.



### Example

An inexperienced individual chosen for on-the-job observation of communications operators on an artillery site may need extensive guidance on peripheral activities such as intelligence restrictions, generator power drills, etc., that will affect observation of job performance.

- Evaluation instruments, such as interviews or observations, require personnel skilled in these techniques.
- Training sessions should be kept as simple as possible; Only the information required for efficient data collection is necessary.

# **Collect Data**

# Other Types of Data

Data collected from sources other than student tests, observations, interviews, and survey questionnaires should also be collected:

Data Collected From Other Sources
Unsolicited Data

### Data Collected From Other Sources

Data from FMF commands, MCCDC, HQMC, and other services provide much insight into the relevance of the program of instruction to the job. These data may be collected via survey questionnaires or interviews.

Unsolicited data can be extremely valuable to an evaluation, but must be screened closely to determine relevance to the evaluation.

# Unsolicited Data

- When collected, these data should be reviewed for their acceptability to the evaluation.
- ① Information determined valuable to the evaluation should be recorded by the Functional Learning Center.
- These data are not solicited but, rather, are sporadically and informally reported by students who have attended the course, personnel who have observed the course, or personnel from a graduate's job.



# References

SAT USER'S GUIDE

MIL HANDBOOK MIL-HDBK-1379-2

# Notes